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Academic Earmarks and the Distribution of Federal Research Funds: A Policy Interpretation

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Ia. DEFINITIONAL PROBLEMS: WHAT IS AN EARMARK?

Depending on whom one talks to, there are several interpretations of just what is an earmark. The following subsection examines several of these definitions; in the next subsection some consideration is given to the strengths and weaknesses of existing data on earmarking.

1. Earmarking is the selection of research facilities or projects for funding by any manner other than peer or merit review. This definition places the greatest emphasis on merit, as judged by a panel of independent experts. The criteria employed by the panels may vary, and could include such items as scientific merit, geographical equity, and preferences for young and minority researchers. The underlying assumption of peer review is that given whatever criteria are used the projects with the highest level of overall merit would be selected. All other forms of selection, particularly by way of political intervention in either the executive branch or Congress, are regarded as earmarking. Under this definition, direct authorizations and appropriations for projects would be earmarks. This interpretation of earmarking has been expressed by NSF director Erich Bloch ("NSF's Bloch Attacks Iowa State's Pork," Science, Nov. 18, 1988, p. 1007).

The strength of this definition is that it is unambiguous; every project not selected on the basis of merit and expert review is an earmark. Most academic research proposals, particularly those funded by NSF and HHS, are indeed reviewed and selected in this fashion. This definition would classify as earmarks projects selected by executive agencies that do not always employ peer review panels. Finally, by setting such an exacting standard, the use of this definition implicitly calls upon the scientific community to make efforts to extend peer review to all federal programs and agencies that allocate research funds.

2. An earmark is a research project or facility directly funded by the Congress. This definition states that an earmarked project is one that would not exist without the intervention of the Congress. Both authorizations and appropriations for projects would be earmarks. On the other hand, a merit reviewed project would not be considered an earmark, nor would a project selected by an executive agency--even if that agency did not employ a merit review panel. The evidence of an agency-requested project is that it appears in the agency's budget proposal, while the evidence for an earmark is that a project appears in an authorizations or appropriations bill/report. This definition of earmarking is commonlly recognized by most universities and higher education associations. The AAU employed a similar definition it its April 1989 resolution on facilities funding, which states, "by 'earmarking' we mean appropriations that designate funding for research...without prior designation from the agency concerned or from a competitive process..." Although the resolution mentions appropriations and neglects to include authorizations, the intent of the definition is to identify Congress as the source of earmarking.

This second definition emphasizes the role of peer review and merit judged criteria in selecting projects, and it also affirms the executive branch's role in administering the federal government's research programs. The weakness of this definition is that it ignores the potential for politics in the selection of projects within the executive branch. Consequently, some members of Congress and key congressional staff argue that agency decisions that do not rely upon peer review are earmarks. These members conclude that therefore they have as much right to select projects as the executive branch. This view is prevalent in the two Energy & Water Appropriations Subcommittees. The members and staff contend that they are also experts and can call upon expert advice of their own, and subject the projects to as much scrutiny as the agencies or even peer review panels. Not surprisingly, some members consider this definition of earmarking to be an insult to the Congress.

3. Direct appropriations for projects in the Agriculture appropriations bill are not at issue in the debate over earmarking. Some higher education associations, including AAU, NASULGC and the Midwestern Universities Alliance, have argued that regardless of their origins, earmarks in the Agriculture appropriations bill are not at issue in the debate over earmarking. The agriculture bill and agricultural research are said to have a distinctive "culture," where the application of earmarking standards to, say, NSF and NIH do not apply ("Congressional Practice of Earmarking Research Grants Does Not Broaden Allocation of Funds, Study Finds," Chronicle of Higher Education, March 1, 1989, p. A17). AAU has publicly indicated that earmarking in the agriculture bill is different because of the special relation Congress has with land-grant institutions. Therefore, agriculture earmarks should not be included in either lists of earmarks or in the debate over earmarking.

A definition of earmarking that excludes any particular appropriations bill or federal agency, such as the Department of Agriculture, undermines the opposition to earmarking for several reasons:

First, such a position is insulting to members who sit on appropriations subcommittees other than Agriculture. These members are unlikely to join the fight against earmarking when they are informed that a technology center, trade center, biology center, or polymers institute earmarked in their bill undermines science and wastes federal funds, but if these same projects are funded by the Agriculture Appropriations Subcommittee they are tolerated by the higher education community. These projects are at best marginally related to agriculture and have indeed been earmarked in the Agriculture appropriations bill.

Second, such a position give earmarkers a green light to shift their projects to the agriculture bill, and thus escape the condemnation higher education reserves for the other subcommittees' earmarks. Some universities have found it impossible to gain earmarked biomedical facilities from the Labor-HHS-Education bill, and so they turned successfully to the Energy & Water and Agriculture subcommittees.

Third, such a position could undercut efforts to increase the merit reviewed research funds in the Agriculture budget, such as the $100 million "Agriculture Initiative" proposed by the Bush budget.

In short, by condoning one form of earmarking on the basis of a reference to history, earmarking of all kinds is encouraged.

4. Earmarks are projects that are initiated by Congress and receive appropriations, but that are unauthorized. Some members of Congress define an earmark as an unauthorized appropriation. If a project is authorized and then later receives an appropriation, then there is no earmark. Even such a staunch opponent of earmarking as Rep. William Natcher (D-KY), chair of the House Labor-HHS-Education Appropriations Subcommittee, holds this view. Natcher assiduously fights unauthorized projects, but he will occasionally appropriate funds for authorized ones.

University lobbyists reportedly are taking advantage of this congressional definition of earmarking. They are expanding their lobbying efforts to include members of the various authorizing committees, wining and dining them and making contributions to their campaign committees. This is being done to legitimize earmarking, by increasing the number of members who actively engage in the practice in addition to those who serve on the appropriations committees.

This definition reflects the view of some members that the legislative process should work as it is formally intended to, where authorizations precede appropriations. Consequently, this definition could be used to fight earmarking, by pointing out to members that the earmarkers are violating the process.

5. Subcontracted projects are not earmarks. Sometimes portions of research contracts and grants are subcontracted out to researchers at other universities. The president of one elite research university that opposes earmarking wrote to one of his faculty that the faculty member could accept a subcontract even though the original award was the result of an earmark. Because the subcontract had not been lobbied for and came indirectly from the federal government, it was an acceptable project.

A special type of subcontracted grant that involves a modified form of peer review is not uncommon in the special projects awards funded from the Agriculture appropriations bill. For example, one university will obtain an earmark and, acting as the principal investigator, share the award with several other universities. The consortium establishes a peer review panel, which sometimes consists of faculty from only those particular universities, to allocate the funds within the group. Thus, although the initial award was earmarked, the subcontracting faculty and institutions may claim that their projects underwent peer review.

In a related fashion, some universities have defended their earmarks by pointing to positive evaluations of the earmarked projects by the

relavant federal agency after the project has been initiated. The positive review suggests that good/adequate science is taking place and therefore the earmark was justified. This argument misses the point: No one claims that simply because a project was funded through earmarking that ipso facto it would produce bad science. The problem is that given limited federal resources many worthy projects are likely to be denied funding, and thus some means of ranking and evaluating research proposals is necessary, if not fair. Some appropriations subcommittees may seek the advice of the relavant agency on the merits of an earmark before funding it, particularly on facilities projects, but there is no evidence that such advice is sought systematically or what influence it has on subcommittee decisions.

6. "Regional" earmarks that do not come from the NIH and NSF budgets are acceptable. The Midwestern Universities Alliance has identified five criteria that define an acceptable earmark: 1) The "NIH and NSF appropriations bills will not be earmarked"; 2) "Funds that would otherwise be available to competing scientists will not be earmarked unless the regional program has been authorized by the Congress and/or budgeted by the Administration"; 3) "Universities in the Midwest will be required to compete for federal funds that are available to the region"; 4) "Regional projects must serve unique needs and interests of the Midwest"; and 5) The project must utilize the resources of more than one Midwestern university." (Newton Cattell, "Midwestern Universities Alliance Programs," Jan. 25, 1989, p. 1.) The upshot of this definition is to provide some cover for a group of universities that seek earmarks. By saying that they would avoid earmarking NIH and NSF is no great sacrifice; to do so would invite condemnation from much of the higher education community, as these two agencies are considered somewhat sacrosanct. The wording on the first criterion is a bit vague: are the entire VA-HUD and Labor-HHS bills off limits, or just the two agency budgets within the bills? The second criterion invokes definition number four above, by stating that once a program is authorized, getting an appropriations for it--even by earmarking and even if it is a the expense of merit reviewed programs--is acceptable.

7. Direct appropriations for historically Black colleges and other traditionally federally funded institutions like Gallaudet University in Washington,D.C., do not constitute earmarks. Some earmarking data, including Boren's Congressional Research Service study ("Apropriations Enacted for Specific Colleges and Universities by the 96th Through the 99th Congress," CRS Report 87-20 EPW, January 14, 1987) and some of Colleen Cordes' data (For example, "Congress Earmarks $270-Million for Specific Projects at Universities," Chronicle of Higher Education, May 9, 1990, p. A1), include historically black colleges in their figures. The debate over earmarking, however, has never been about these institutions. Even the NSF lists of the top receipients of federal research funds provides a separate list for historically Black schools. (See Federal Support to Universities, Colleges, and Selected Nonprofit Institutions issued by NSF, all fiscal years.) In my data I make an effort to exclude these in-

stitutions for this reason. These schools are included in the Boren study because the CRS used the Scorpio computer program to gather the data, which identified all institutions that were listed by name. All institutions so identified were then made part of the CRS lists of earmarks.

Summary

Institutions that engage in the practice are unlikely to be deterred by any definition of earmarking. Once exceptions are made to the first definition, that an earmark is a project that is not approved through peer review, the earmarkers will find a way to twist these definition to justify their actions. If, for example, executive agencies are allowed to evaluate projects without peer review, then Congress should also have that power. If the Agriculture appropriations bill should somehow be considered different and not really a source of intolerable earmarking, use that bill to earmark. If a project is authorized, then obtaining an appropriations for it is not earmarking.

Ib. EXISTING DATA AND DEFINITIONS

The primary data on earmarking consist of Susan Boren's 1987 CRS study, "Appropriatons Enacted for Specific Colleges and Universities by the 96th through the 99th Congress," occasional listings in Dan Greenberg's "Science and Government Report," a study that I understand was recently completed by the Defense Department for the Senate or House Armed Services Committee (I do not have a reference), Colleen Cordes' lists in the Chronicle of Higher Education, a few stories in the newsletter "Higher Education Daily," and my data. As stated, Boren's data are limited to institutions identified by name in the bills. The Cordes list is most complete for FY 90; sometimes she has relied upon my figures in previous years (See, for example, Chronicle, Jan. 27, 1988). The DoD list is recent, though I don't know how many years it covers, and OTA should be able to get a copy from which ever Armed Services committee commissioned it. OTA should also consider requesting such data, if they exist, from the various agencies and committees, if nothing else but to inventory what they have available. My data provide the only longitudinal perspective of which I am aware. The data are based on the CRS figures and my own reading of the bills. My figures suffer primarily from the difficulty I experienced in identifying many of the unnamed special project grants in the Agriculture appropriations bill. On this score, Cordes' most recent list is more inclusive than mine, although her list includes a number of historically Black colleges, which I do not consider to be at issue in the earmarking debate.

All of these data employ a definition that corresponds roughly to the AAU definition, that an earmark is directly funded by the Congress and has not been subjected to peer/merit review. The data focus on appropriations, though the CRS data do cite some authorizations. This tendency reflects the fact that most earmarks are to be found in

appropriations rather than authorizations bill. (As an aside, an interesting question is this: Will an agency fund an earmark if it is authorized but not appropriated, especially if the authorization calls for the project to be funded from existing money?)

II. CAN OR DOES EARMARKING INCREASE EQUITY IN THE DISTRIBUTION OF RESEARCH FUNDS, AND IS IT EFFECTIVE FOR IMPROVING INSTITUTIONAL RESEARCH CAPABILITY?

As with "earmarking," the term "equity" deserves some analysis. What is equity and for whom? How is it measured? If equity means that all of the approximatly 3,500 colleges and universities in the U.S. deserve or have a right to federal funds for facilities and/or research funds, particularly to the point where they can become "elite" in some sense, then the federal government faces a bottomless pit of a problem. Obviously, there are simply not enough funds, no matter how they are allocated, to meet the demand of the various interests within the academic community. For example, when the relevant congressional committees recently considered the NSF facilities proposals for the NSF authorization, liberal arts colleges sought funding from a program that initally was intended for research universities. Equity, and for whom, soon becomes a matter of prioritizing in order to provide some rationalization in the allocation of scarce resources.

A critical analytical issue in looking at the matter of equity is determining whether equity is institutionally or geographically based. The historical concern within the Congress over equity on science funding was centered on geographical equity, not the contemporary emphasis on individual institutional equity. If Congress measures equity in institutional terms, however, it sets itself up the hopeless task of insuring that, say, all the universities in the Boston area are competitive enough to be in the top 25 recipients of federal research funds. Many earmarking institutions are already in the top 50, but nevertheless are dissatisfied with the amount of federal research funds.

A more reasonable concern for equity should focus on geographical distribution. A geographical emphasis suggests that the best institutions from each major region (i.e., state) should be competitive in seeking federal funding. In this manner, equity is combined with merit, and each region has some opportunity to develop centers of excellence. Not every institution in every state can become a center of excellence; there is not that much money in the world to support such ambitions.

The common argument made in behalf of earmarking is that the merit reveiw system is biased in favor of elite universities. Coupled with the lack of a meaningful (seriously funded) federal facilities program, "emerging" academic institutions claim that they must seek earmarked facilities to improve their scientific infrastructure to be competitive in obtaining research awards. Inequities found in the current system, therefore, are said to be remedied in part through

earmarking.

My data, which I have previously provided to OTA, indicate, however, that rather than making the distribution of funds more equitable, earmarking primarily benefits a handful of states and academic institutions. For example, when looking at state earmark rankings for FY 80-90, as shown in the accompanying table, just five states have received nearly 40 percent of all earmark dollars in the past eleven fiscal years; the top ten states have received a cumulative total of nearly 60 percent; and the top fifteen states have received almost three-fourths of all earmarked dollars. The bottom twenty-three states received just 9.1 percent of the earmarks.

If earmarking contributes at all to equity, it does so in two ways. First, there has been a slight shift in the ranking of states, which primarily reflects changes in the makeup and seniority of members of Congress. The loss, for instance, of Rep. Chappell and Sen. Chiles contributed to a decline in Florida's earmark dollars, while Rep. Traxler's new chairmanship of VA-HUD has aided Michigan. Second, a handful of new states (Tennessee and Maine) and academic institutions were recipients of earmarks in FY 90. This broadening of the earmark base, however, is offset by the small size of the earmarks involved. Many of the institutions that participate in earmarking receive relatively few federal dollars while their participation helps to justify a practice that shifts significant resources to a few states and institutions. Nevertheless, these institutions are likely to continue earmarking unless it can be demonstrated that they are as likely to receive similar amounts of funds through, say, a federal facilities program, as they would by way of earmarking.

IIb. IS EARMARKING EFFECTIVE FOR IMPROVING INSTITUTIONAL RESEARCH CAPABILITY?

To answer this question one would have to know the answer to the following: Have the institutions that have received large amounts of earmarks significantly improved their research capability and quality, and are these improvements a direct result of the earmarks? Between FY 80-89, twenty-one academic institutions each received more than $14 million in earmarked funds, or collectively 60 percent of the total earmarked dollars. (I have previously provided these data to OTA). It would be surprising if none of these institutions improved their capabilities, given the large amounts of extra federal resources they have received. The failure to see some improvement in an institution that obtained anywhere from between $20 to $40 million in earmarks would bring into serious question that institution's administrative and academic abilities.

To determine the relationship between earmarking and research capability, these questions need to be addressed: How have these institutions used their earmarked funds? Have they recruited new faculty and provided the instrumentation and other forms of support required to improve their ability to compete for merit reviewed grants? Have earmarks that have been targeted to benefit only a few

APPARENT ACADEMIC EARMARKS IN THE FY 1980-90
APPROPRIATIONS BILLS, RANKED BY STATE

Earmark Rank	Earmarked Funds	Percent of Funds by Quintile (Cumulative)
1. Massachusetts	$ 94,376,000	
2. Oregon	89,533,999	
3. New York	79,401,333	
4. Louisiana	69,075,000	
5. Florida	63,927,500	38.4%
6. Illinois	62,319,000	
7. West Virginia	40,348,000	
8. South Carolina	37,700,000	
9. Iowa	36,158,000	
10. Alabama	34,700,000	58.8
11. North Dakota	30,760,333	
12. New Hampshire	30,045,000	
13. Hawaii	26,817,500	
14. Pennsylvania	26,800,000	
15. Mississippi	26,626,000	72.5
16. Nevada	26,100,000	
17. Arizona	24,075,000	
18. California	21,960,000	
19. Texas	21,020,000	
20. Oklahoma	20,765,000	83.5
21. Washington	18,857,272	
22. Indiana	15,550,000	
23. District of Columbia	15,020,000	
24. Kansas	14,321,000	
25. North Carolina	12,790,000	90.9
26. Michigan	11,450,000	
27. Utah	11,027,272	
28. Maryland	9,350,000	
29. New Jersey	9,160,000	
30. Kentucky	7,031,000	95.5
31. New Mexico	6,250,000	
32. Ohio	5,700,000	
33. Rhode Island	5,000,000	
34. Wisconsin	4,650,000	
35. Idaho	4,290,000	98.0

36.	Connecticut	3,750,000	
37.	Nebraska	3,315,000	
38.	Georgia	2,263,000	
39.	South Dakota	1,895,333	
40.	Minnesota	1,800,000	99.3
41.	Vermont	1,600,000	
42.	Arkansas	1,585,000	
43.	Virginia	1,043,000	
44.	Tennessee	1,000,000	
45.	Maine	729,272	99.9
46.	Montana	425,000	
47.	Missouri	400,000	
48.	Alaska	290,000	100.0%

Total $ 1,033,049,814

No earmarks were identified for Colorado, Delaware, or Wyoming.

disciplines at a given institution resulted in a more generalized excellence at the campus? If an institution improves its research capabilities, as indicated by a change in its ranking of federal research funds, is this due to the earmarks it receives? Or could it be that a university administration that seeks earmarks is also engaged in a more generalized commitment to strengthening a given institution? These are the empirical questions on the relationship between earmarking and research funding that range beyond the scope of this paper. Nevertheless, are suggestive of the types of questions that should be asked, and they point to the lack of evaluation of the effect of earmarking on individual institutions over time.

III. POLICY IMPLICATIONS OF THE TRENDS IN EARMARKS: CONGRESSIONAL EFFORTS TO LEGITIMIZE OR CURB EARMARKS

There is very little that Congress could do that would legitimize earmarking to those institutions that oppose it. Congress, however, could: (1) Require that the relevant agency have veto power over an earmark. The veto should be based on (a) technical grounds and (b) the notion that the project complement the research goals of the agency. (2) Require the relevant agency to evaluate the earmarked project by way of a merit review process throughout its funding cycle. If the project fails its evaluation, they agency could exercise its veto power and terminate funding for the project. (3) Fund only facilities. A major concern of those institutions that oppose earmarking is that research projects (contracts and grants) and instrumentation, as well as facilities, would be earmarked.

Theoretically, curbing earmarks would be easier to accomplish than legitimizing them. Rules could be passed that would prevent earmarks, limit their dollar value, and/or limit the number that could go to any institution, state, or congressional district. The opposition to the Danforth-Nunn points of order proposal in the Senate (S. Res. 206), however, suggests how difficult it would be to get such rules adopted. Nevertheless, because of their immediate effect on legislation, these direct points of order would likely be more effective than the indirect constraints contained in the Byrd amendments on lobbying.

The most intractable aspect of curbing earmarks is the simple fact that most members want to bring projects home to their constituents. Thus, concerns for equity and merit are obviously complicated by politics, and any solution for curbing earmarking must take this into account. The fundamental question that must be asked is what solution would keep Jamie Whitten, Tom Bevil, and Mark Hatfield, among others, from earmarking. <u>The probable solution would most likely enable these members to claim some credit for the projects that went to their state or district, even if the projects were actually selected by merit review</u>. What is important is that there be the appearance that the Members played some role in the allocation process. Without this appearance, proposed remedies such as facilities legislation are unlikely to satisfy the Members' desire to help their constituents. In addition to simple credit claiming, however, some Members who earmark are motivated by their genuine distrust of peer review, by the desire to exercise power, and by a commitment to provide favors to

their colleagues. In these cases, solutions that only respond to credit claiming and reelection motives would prove to be only partially adequate.

My own discussions with Members and staff and examinations of appropriations bills suggest that Members appear to be reluctant to earmark merit reviewed programs. The HHS and NSF budgets serve as the most obvious examples of these types of agencies. Part of the reason the Energy, Agriculture, and Defense budgets are earmarked is because these agencies are not fully merit reviewed; i.e., research funds in these agencies are often awarded on other criteria and procedures than merit review. Jamie Whitten's opposition to the Agriculture Research Initiative stems partially from his accurate understanding that merit reviewed funds would crowd out the earmarked special project grants in his bill. Despite Whitten's opposition, those who seek to curb earmarking should attempt to bring as many current sources of earmarks under merit review as possible.

Earmarking will be difficult to legitimize or curb because these goals represent the opposite ends of the spectrum on the issue, and as of yet there has been little in the way of successful compromise. The efforts by Members and the academic science community to find a compromise by way of facilities legislation is hamstrung be the lack of funding available to meet real facilities needs. Moreover, if facilities funds are to be made available almost exclusively to "emerging" institutions, liberal arts colleges, etc., these types of programs will soon be opposed by the more elite research universities. The elite universities want programs in which they too can participate, and that will not be funded at the expense of merit reviewed research budgets.

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